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09/635,911	08/10/2000	Badri N. Prasad	6759	6357

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DORSEY & WHITNEY LLP  
INTELLECTUAL PROPERTY DEPARTMENT  
50 SOUTH SIXTH STREET  
MINNEAPOLIS, MN 55402-1498

EXAMINER

BLECK, CAROLYN M

ART UNIT	PAPER NUMBER
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3626

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/635,911

Applicant(s)

PRASAD ET AL.

Examiner

Carolyn M Bleck

Art Unit

3626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

*Notice to Applicant*

1. This communication is in response to the amendment filed 19 May 2004. Claims 1-49 are pending. Claims 1, 15, 25-26, 39, and 43 have been amended. Claims 48-49 are newly added. It is assumed that claim 14 is not amended as no status was given for the claim.

*Claim Rejections - 35 USC § 112*

2. The rejections of claims 15, 25-26, and 39-46 are hereby withdrawn due to the amendments filed 19 May 2004.

*Claim Rejections - 35 USC § 101*

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-49 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a two-prong test of:

- (1) whether the invention is within the technological arts; and
- (2) whether the invention produces a useful, concrete, and tangible result.

(A) For a claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the “progress of science and the useful arts” (i.e., the physical sciences as opposed to social sciences, for example), and therefore are found to be non-statutory subject matter. For a process claim to pass muster, the process must somehow apply, involve, use, or advance the technological arts.

In the present case, claim 48-49 only recite an abstract idea. The recited steps of merely collecting prior healthcare use claims data for a plan member, calculating a burden of illness for the member based on the plurality of provider claims, computing a score for the member based on the burden of illness and at least one explanatory variable, and using the score to identify plan members to whom preventative measures are recommended in an effort to reduce consumption of healthcare resources do not apply, involve, use, or advance the technological arts since all of the recited steps can be performed in the mind of the user or by use of a pencil and paper. These steps only constitute an idea of how to model the utilization of healthcare resources.

Additionally, for a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result. In the present case, the claimed invention computes a score for a member (i.e., repeatable) to model healthcare utilization (i.e., useful and tangible).

Although the recited process produces a useful, concrete, and tangible result, since the claimed invention as a whole, is not within the technological arts as explained above, claims 48-49 are deemed to be directed to non-statutory subject matter.

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(B) The amendments to claims 1-47 fail to overcome the rejections of those claims under 35

U.S.C. § 101. See response in section *Response to Arguments* below.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-7, 9, 11, 14-16, 18-21, 23-24, 25-32, 35-37, and 39-46 are rejected under 35

U.S.C. 102(e) as being anticipated by Wong et al. (5,976,082).

(A) Claim 1 has been amended to recite “for predicting a level of consumption of healthcare services.” Wong discloses the variables in the model for prediction including those which best reflect a correlation to adverse health outcomes, consequently, resulting in substantial use of healthcare resources (e.g. funds) (col. 5 lines 18-25). The remaining features of claim have not been amended, and are therefore rejected for the same reasons given in the previous Office Action, and incorporated herein (paper number 6, sections 8(A), pages 5-6).

(B) Claims 2-7, 9, 11, 14, 16, 18-21, 23-24, 27-32, 35-37, 40-42, and 44-46 have not been amended, and are therefore rejected for the same reasons given in the previous Office Action, and incorporated herein (paper number 6, sections 8).

(C) The amendments to claims 15, 25-26, 39, and 43 appear to have been made to merely correct 112, 2<sup>nd</sup> issues, but otherwise do not affect the scope and breadth of the claims as originally presented and/or in the manner in which the claim was interpreted by the Examiner when applying prior art within the previous Office Action.

As such the recited claimed features are rejected for the same reasons given in the prior Office Action (paper number 6, sections 8), and incorporated herein.

7. Claims 48-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Whiting-O'Keefe.

(A) As per claim 48, Whiting-O'Keefe disclosed a method for estimating the likely charges (expenditure of resources) for treating a given patient comprising:

(a) inputting data for patients, wherein data includes insurance reimbursement forms (reads on "healthcare use claims") (Fig. 2, col. 7 lines 34-52, col. 14 lines 12-24);

(b) estimating the charges for treating an illness using multiple linear regression, wherein the act of estimating comprises estimating a burden of illness for each patient (Abstract; Fig. 8, col. 2 lines 22-30, col. 13 line 52 to col. 14 line 67); and

(c) using the values to estimate the likely charges (expenditure of resources) for treating a given patient (Abstract; col. 2 lines 22-30, col. 13 line 52 to col. 14 line 67).

(B) As per claim 49, Whiting-O'Keefe disclosed a method for estimating the likely charges (expenditure of resources) for treating a given patient comprising:

(a) inputting data for patients, wherein data includes insurance reimbursement forms (reads on "healthcare use claims") (Fig. 2, col. 7 lines 34-52, col. 14 lines 12-24);

(b) estimating the charges for treating an illness using multiple linear regression, wherein the act of estimating comprises estimating a burden of illness for each patient based on the forms and other variables to calculate the charges (Abstract; Fig. 8, col. 2 lines 22-30, col. 13 line 52 to col. 14 line 67); and

(c) using the values to estimate the likely charges (expenditure of resources) for treating a given patient in order to improve the efficiency of the healthcare provider (Abstract; col. 1 line 55 to col. 2 line 8, col. 2 lines 22-30, col. 13 line 52 to col. 14 line 67).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 8, 10, 12-13, 17, 38, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (5,976,082) as applied to claim 1.

(A) Claims 8, 10, 12-13, 17, 38, and 47 have not been amended and are rejected for the same reasons given in the prior Office Action (paper number 6; section 9(A-F); pages 13-16).

10. Claims 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (5,976,082) as applied to claim 1, and further in view of Mohlenbrock et al. (5,018,067).

(A) Claim 22 has not been amended and is rejected for the same reasons given in the prior Office Action (paper number 6; section 11(A); page 16).

11. Claims 33-34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (5,976,082) as applied to claim 1, and further in view of Lockwood (5,706,441).

(A) Claims 33-34 have not been amended and are rejected for the same reasons given in the prior Office Action (paper number 6; section 12(A); page 17).

### ***Response to Arguments***

12. Applicant's arguments filed 19 May 2004 have been fully considered but they are not persuasive. Applicant's arguments are discussed below in the order in they appear in the response filed 19 May 2004.

(A) At pages 8-9 of the response filed 19 May 2004, Applicant argues that claims 1-47 are within the technological arts, and are therefore statutory subject matter under 35 U.S.C. § 101.

Regarding the requirement under 35 U.S.C. §101 that a claimed invention be limited to the technological arts in order to be deemed statutory and in response to Applicant's arguments found on pages 8-9, the Examiner submits that the phrase "technological arts" has been created



and used by the courts to offer another view of the term “useful arts.” See *In re Musgrave*, 167 USPQ (BNA) 280 (CCPA 1970). Hence, the first test of whether an invention is eligible for a patent is to determine if the invention is within the “technological arts.”

Further, despite the express language of §101, several judicially created exceptions have been established to exclude certain subject matter as being patentable subject matter covered by §101. These exceptions include “laws of nature,” “natural phenomena,” and “abstract ideas.” See *Diamond v. Diehr*, 450, U.S. 175, 185, 209 USPQ (BNA) 1, 7 (1981). However, courts have found that even if an invention incorporates abstract ideas, such as mathematical algorithms, the invention may nevertheless be statutory subject matter if the invention as a whole produces a “useful, concrete and tangible result.” See *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* 149 F.3d 1368, 1973, 47 USPQ2d (BNA) 1596 (Fed. Cir. 1998). This addresses the second test under 35 U.S.C § 101 of whether or not an invention is eligible for a patent. The Manual of Patent Examining Procedure reiterates this point. More specifically, MPEP § 2106(II)(A) states, “The claimed invention as a whole must accomplish a practical application. That is, it must produce a ‘useful, concrete and tangible result.’ *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02.” Furthermore, “Only when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under 35 U.S.C. 101.” (MPEP § 2106(II)(A))

This “two prong” test was evident when the Court of Customs and Patent Appeals (CCPA) decided an appeal from the Board of Patent Appeals and Interferences (BPAI). See *In re Toma*, 197 USPQ (BNA) 852 (CCPA 1978). In *Toma*, the court held that the recited mathematical algorithm did not render the claim as a whole non-statutory using the Freeman-

Walter-Abele test as applied to *Gottschalk v. Benson*, 409 U.S. 63, 175 USPQ (BNA) 673

(1972). Additionally, the court decided separately on the issue of the “technological arts.” The court developed a “technological arts” analysis:

The “technological” or “useful” arts inquiry must focus on whether the claimed subject matter...is statutory, not on whether the product of the claimed subject matter...is statutory, not on whether the prior art which the claimed subject matter purports to replace...is statutory, and not on whether the claimed subject matter is presently perceived to be an improvement over the prior art, e.g., whether it “enhances” the operation of a machine. *In re Toma* at 857.

In *Toma*, the claimed invention was a computer program for translating a source human language (e.g., Russian) into a target human language (e.g., English). The court found that the claimed computer implemented process was within the “technological art” because the claimed invention was an operation being performed by a computer within a computer.

The decision in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* never addressed this prong of the test. In *State Street Bank & Trust Co.*, the court found that the “mathematical exception” using the Freeman-Walter-Abele test has little, if any, application to determining the presence of statutory subject matter but rather, statutory subject matter should be based on whether the operation produces a “useful, concrete and tangible result.” See *State Street Bank & Trust Co.* at 1374. Furthermore, the court found that there was no “business method exception” since the court decisions that purported to create such exceptions were based on novelty or lack of enablement issues and not on statutory grounds. Therefore, the court held that “[w]hether the patent's claims are too broad to be patentable is not to be judged under §101, but rather under §§102, 103 and 112.” See *State Street Bank & Trust Co.* at 1377. Both of these

analyses go towards whether the claimed invention is non-statutory because of the presence of an abstract idea. *State Street* never addressed the first part of the analysis, i.e., the “technological arts” test established in *Toma* because the invention in *State Street* (i.e., a computerized system for determining the year-end income, expense, and capital gain or loss for the portfolio) *was already determined to be within the technological arts* under the *Toma* test. This dichotomy has been recently acknowledged by the Board of Patent Appeals and Interferences in affirming a §101 rejection finding the claimed invention to be non-statutory for failing the technological arts test. See *Ex parte Bowman*, 61 USPQ2d (BNA) 1669 (BdPatApp&Int 2001).

What is indeed important to note in the *Bowman* decision is that the Board acknowledged the dichotomy of the analysis of the claims under 35 U.S.C. § 101, thereby emphasizing the fact that not only must the claimed invention produce a “useful, concrete and tangible result,” *but that it must also be limited to the technological arts* in order to be deemed statutory under the guidelines of 35 U.S.C. § 101. The Board very explicitly set forth this point:

[1] We agree with the examiner. Appellant has carefully avoided tying the disclosed and claimed invention to any technological art or environment. As noted by the examiner, the disclosed and claimed invention is directed to nothing more than a human making mental computations and manually plotting the results on a paper chart [answer, page 5]. The Examination Guidelines for Computer-Related Inventions are not dispositive of this case because there is absolutely no indication on this record that the invention is connected to a computer in any manner.

Despite the express language of 35 U.S.C. §101, several judicially created exceptions have been excluded from subject matter covered by Section 101. These exceptions include laws of nature, natural phenomenon, and abstract ideas. See *Diamond v. Diehr*, 450 U.S. 175, 185, 209 USPQ 1, 7(1981). We interpret the examiner’s rejection as finding that the claimed invention before us is nothing more than an abstract idea because it is not tied to any technological art or environment. Appellant’s argument is that the physical (even manual) creation of a chart and the plotting of a

point on this chart places the invention within the technological arts.

The phrase “technological arts” has been created to offer another view of the term “useful arts.” The Constitution of the United States authorizes and empowers the government to issue patents only for inventions which promote the progress [of science and] the useful arts. We find that the invention before us, as disclosed and claimed, does not promote the progress of science and the useful arts, and does not fall within the definition of technological arts. The abstract idea which forms the heart of the invention before us does not become a technological art merely by the recitation in the claim of “transforming physical media into a chart” [sic, drawing or creating a chart] and “physically plotting a point on said chart.”

In summary, we find that the invention before us is nothing more than an abstract idea which is not tied to any technological art, environment, or machine, and is not a useful art as contemplated by the Constitution of the United States. The physical aspects of claim 1, which are disclosed to be nothing more than a human manually drawing a chart and plotting points on this chart, do not automatically bring the claimed invention within the technological arts. For all these reasons just discussed, we sustain the examiner’s rejection of the appealed claims under 35 U.S.C. §101. *See Ex parte Bowman*, 61 USPQ2d (BNA) 1669, 1671 (BdPatApp&Int 2001)

Similarly, in the present application, claims 1-49 are deemed to be non-statutory because they are not limited to the technological arts; all recited steps could be performed manually by a human, thereby reinforcing the fact that Appellant’s invention fails to “[p]romote the progress of science and useful arts,” as intended by the United States Constitution under Art. I, §8, cl. 8 regarding patent protection.

In conclusion, the Examiner submits that Appellant’s claims do not meet the technological arts requirement under 35 U.S.C. § 101, as articulated in *Musgrave*, *Toma*, and *Bowman* as well as the Manual of Patent Examining Procedure.

(B) At pages 9-10 of the response filed 19 May 2004, Applicant argues that Wong does not disclose or suggest “calculating a burden of illness.”

It is noted that Applicant provides no strict definition of the term “burden of illness.” It appears from claim 1 that a burden of illness is a number. Wong disclosed calculating the value of independent variables which represent potential predictors of adverse health outcomes to calculate the value of Logit(p) (Figures 2-5, col. 4 line 60 to col. 5 line 65, col. 7 line 21 to col. 8 line 22, col. 12 line 23 to col. 13 line 50, col. 14 line 59 to col. 15 line 13, col. 17 line 49 to col. 18 line 50). This value is considered a “burden of illness.” Thus, the Examiner has given the claims their broadest reasonable interpretation (see MPEP 2111). Further, although it is proper to use the specification to interpret what the applicant meant by a word or phrase recited in the claim, it is not proper to read limitations appearing in the specification into the claim when these limitations are not recited in the claim. *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994); *Intervet America Inc. v. Kee-Vet Lab. Inc.*, 887 F.2d 1050, 1053, 12 USPQ2d 1474, 1476 (Fed. Cir. 1989). If Applicant requires a strict definition of the term, it is suggested the Applicant amend the claims to better reflect what applicant intends to claim as the invention.

(C) At pages 9-10 of the response filed 19 May 2004, Applicant argues that Wong does not disclose or suggest predicting a level of consumption of healthcare resources by a plan member.

As per this newly added limitation, the Examiner respectfully submits that Wong discloses the variables in the model for prediction including those which best reflect a correlation

to adverse health outcomes, consequently, resulting in substantial use of healthcare resources (e.g. funds) (see rejection of claim 1 above and col. 5 lines 18-25 of Wong).

***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carolyn Bleck whose telephone number is (703) 305-3981. The Examiner can normally be reached on Monday-Thursday, 8:00am – 5:30pm, and from 8:30am – 5:00pm on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas can be reached at (703) 305-9588.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Receptionist whose telephone number is (703) 306-1113.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**15. Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**Or faxed to:**

(703) 872-9306 or (703) 872-9326 [Official communications]

(703) 872-9327 [After Final communications labeled "Box AF"]

(703) 746-8374 [Informal/ Draft communications, labeled "PROPOSED"  
or "DRAFT"]

Hand-delivered responses should be brought to Crystal Park 5, 2451 Crystal Drive, Arlington, VA, 7th Floor (Receptionist).

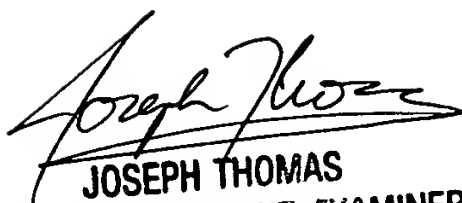
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*CB*  
CB

October 6, 2004

  
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SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600